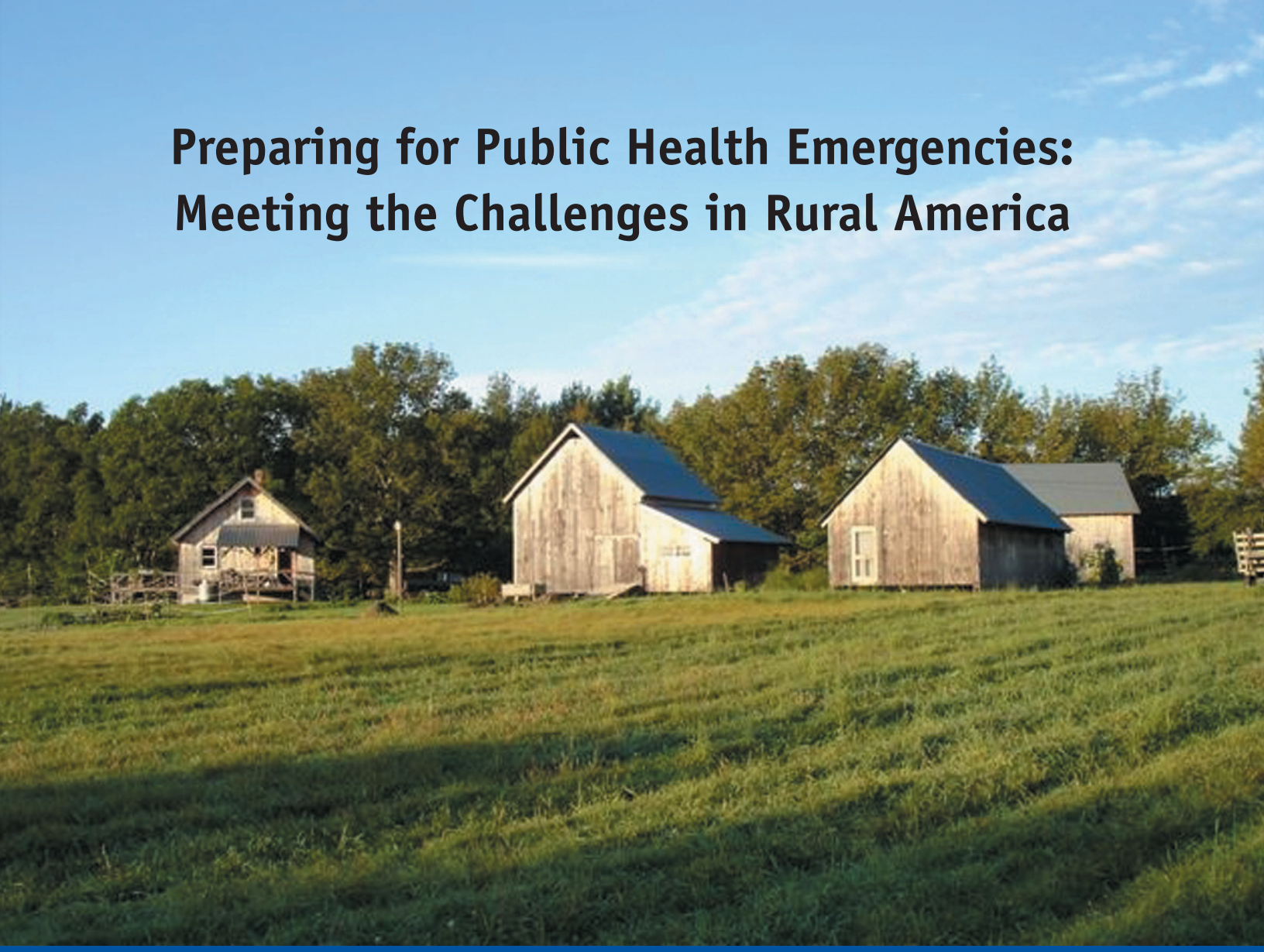
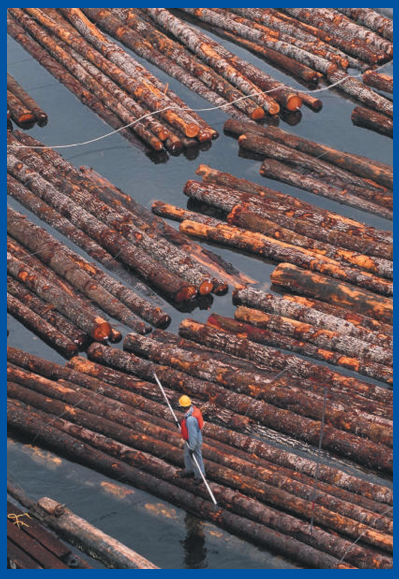
Preparing for Public Health Emergencies: Meeting the Challenges in Rural America



Conference Proceedings and Recommendations
Saint Paul, MN
September 27-28, 2004



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Acknowledgments

The development of this first national conference on rural preparedness, *Preparing for Public Health Emergencies: Meeting the Challenges in Rural America* (2004) was a collaborative effort by rural public health experts from around the country. This group includes the **Conference Planning Committee** which consisted of the following individuals: **Paul Campbell, Paul Kuehnert, Michael Meit, Janet Place, Barbara Quiram, John Shutske, Hugh Tilson and Becky Whittemore.**

We would also like to thank the **sponsoring organizations**:

- **Harvard School of Public Health Center for Public Health Preparedness**
- **Maine Center for Public Health**
- **Office of Public Health Emergency Preparedness, Bureau of Health, Maine Department of Health and Human Services**
- **Texas A&M School of Rural Public Health; Office of Special Programs**
- **University of Minnesota Center for Public Health Preparedness**
- **University of North Carolina School of Public Health**
- **University of Pittsburgh Graduate School of Public Health, Center for Rural Health Practice and Center for Public Health Preparedness**

Special acknowledgment also goes to the staff at the Harvard School of Public Health Center for Public Health Preparedness; **Nannette Bailey** and **Joshua Frances** for their countless hours of coordinating, planning and managing the conference.

This report was prepared by Paul Campbell, ScD, MPA and Joshua Frances from the Harvard School of Public Health Center for Public Health Preparedness, and Michael Meit, MA, MPH from the University of Pittsburgh Center for Rural Health Practice. This report was edited by Sally Farrand, Manager of Communications and Education at the Maine Primary Care Association located in Augusta, Maine.

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Preface

This report describes the first national conference on rural public health emergency preparedness ever held in the United States. Organizers entitled it *Preparing for Public Health Emergencies: Meeting the Challenges in Rural America*. The idea for this conference grew out of a previous effort to develop the first research agenda for rural public health and the resulting report, *Bridging the Health Divide: The Rural Public Health Research Agenda*[1]. Rural Preparedness was but one topic covered in that report and conference organizers felt that it deserved greater attention.

The *Preparing for Public Health Emergencies: Meeting the Challenges in Rural America* conference was held in Saint Paul, Minnesota September 27 – 28, 2004. The session brought together 81 public health preparedness leaders from multiple states to identify important yet unique barriers facing rural public health preparedness and the strategies to overcome those barriers.

The specific goals for the conference were to:

- Identify important and unique barriers, as well as strategies to strengthen public health emergency preparedness in rural areas;
- Identify recommendations for federal and state policies regarding funding, capacity-building and research;
- Form an ongoing group of public health advocates committed to advancing emergency public health preparedness in rural areas; and
- Publish the conference proceedings.

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January 2005

Dear Readers,

The events of September 11, 2001 changed the public health environment in our country forever. The way in which we interpret the role of our public health system in our communities has changed. While we must remain vigilant in our quest to address the public health issues of the day -- whether it is immunization or developing comprehensive chronic disease prevention programs -- the demand on our state and local health departments and the public health workforce across the nation is challenged. In addition to these traditional responsibilities, the potential threat of a bioterrorist attack, a flu pandemic, or a newly emerging infectious disease is real. We must determine how to be prepared for those unknowns, while at the same time not compromising the essential work that the public health community undertakes every day.

Rural public health issues in general have received little attention on the national scene. You will have an opportunity to shape the debate, by defining the problem, offering effective solutions and looking for windows of opportunity to elevate its visibility on the national policy agenda. Federal leaders have not had an opportunity to learn about these issues, and one of your most important jobs will be to help educate policymakers.

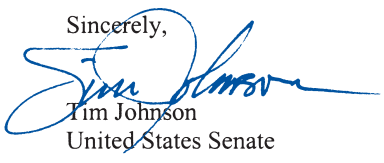
Addressing these issues in any state is difficult, but rural states and their local communities have an even greater challenge. As we know, public health worker shortages are especially acute in rural states, and the resources to implement public health programs run thin. These barriers, coupled with a fragmented public health and health care delivery system in rural America, make it hard to get things done as quickly and efficiently as some of our more urban states.

More resources are clearly needed. The misguided decision to redirect CDC bioterrorism funds away from states to select cities will have real, detrimental effects on public health preparedness, and particularly rural public health efforts. While resources are an essential element in this time of extraordinary budget deficits, requests for additional funds must be backed by a well thought out plan.

We must be creative in our approach to addressing needs, recognizing that urban models do not always fit rural situations. We must consider the diversity in our communities and the unique nature of those rural environments. I believe firmly that the close relationships are one of the greatest strengths found in rural communities of this nation.

We must find ways to boost the rural public health infrastructure and provide adequate systems and technology to ensure that our communications capabilities are as efficient and effective as possible. We must also make the sustainability of the public health workforce a top priority. As we do those things, we address rural public health preparedness inherently, but we also get at those bigger, broader issues that are fundamental to protecting our communities from all health threats.

Sincerely,



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Congress of the United States
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January, 2005

Dear Reader:

Throughout history, rural America has consistently done more with less, whether it be in regards to education, economic development, basic public health infrastructure, or health care. In regards to these last two, rural communities are facing the daunting confluence of inadequate government reimbursements to health care providers, a non-competitive private insurance market which overcharges and underpays, growing health care and public health workforce shortages, a spiraling medical malpractice crisis, and now in the aftermath of September 11, 2001, the need to prepare for another catastrophe which we cannot see coming. . . if it ever comes at all.

Natural disasters, disease outbreaks, and potential impacts from a bioterrorist attack do not discriminate according to population or geographic location; nor should our federal policy on basic public health preparedness. As articulated in this report, a lack of basic public health infrastructure is the reality for many in rural communities. If we are to assure an adequate public health response in any emergency, we must have the infrastructure to fulfill public health functions, whether or not a community has the benefit of a local governmental public health agency.

Quite simply, a one-size-fits-all approach to preparedness that assumes every county in America has a fully staffed health department is a disservice to citizens in many small, remote towns that lack this infrastructure. Clearly, nobody would say that these citizens have any less of a right to be protected, and our policies, recommendations, and resources must assure equitable emergency response. Identifying and addressing the key public health functions that must be carried out in an emergency is a necessary first step in this process.

Similarly, our rural health care infrastructure is also ill prepared for a large scale public health emergency. Paradigms that fail to account for the massive strain put upon the rural health care system resulting from care-seeking people fleeing large urban areas after any future attack are naïve and misguided. This report thoughtfully examines these, and other challenges, facing rural communities. Perhaps most importantly, this report offers insights and guidance to policy makers at every level of our republic so as to better address these situations before they arise.

I firmly believe that the "can-do" attitude of independent minded rural Americans is our greatest asset. We routinely do more with less, particularly when faced with challenges. This newest trial must be no different; and I am confident that rural Americans will once again rise to the occasion in addressing the preparedness concerns raised in this report.

John E. Peterson
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Executive Summary

Rural communities in America often lack a strong local public health infrastructure which can confound efforts to respond in a timely way to public health needs. The lack of local governmental accountability in conjunction with a related lack of community health resources in general creates a situation in which each community must tap into unique and often non-traditional resources to address community needs. As a consequence of these barriers, a variety of resources have been developed with little uniformity across communities. These are the resources that will likely need to be tapped for effective bioterrorism/emergency response. We must know the resources available in each community before we can consider issues such as resource sharing and cross-community collaboration. Many of the bioterrorism response tools that have been developed to this point, such as *Project Public Health Ready** and the Centers for Disease Control and Prevention (CDC) *Local Public Health Preparedness and Response Capacity Inventory* have focused on the existence of strong local public health capacities. Applying these tools to areas without a strong local public health infrastructure and ensuring that they capture other community resources is difficult given their current focus.

Issues related to surge capacity are particularly difficult for rural areas with fewer public health and healthcare personnel. The shortage of health care providers throughout rural America and the lack of accessibility to health care facilities have a direct impact on response planning. Even where health care facilities exist, rural emergency rooms tend to be staffed by a single physician who would simply not have the capacity to handle multiple cases. Because rural communities need to address preparedness issues from both the perspective of being a direct target as well as a destination for affected citizens from urban areas, the response plan will necessarily be more complex. Identifying a network of qualified surge responders and ensuring proper training must be a priority.

In January 2004, the effectiveness of rural preparedness efforts was seriously questioned by a well-publicized national evaluation of all 50 states. The Robert Wood Johnson (RWJ) Foundation funded organization, Trust for America's Health, conducted a national study. The subsequent report entitled *Ready or Not: Protecting the Public's Health in the Age of Bioterrorism*[2] measured each state against 10 criteria that were developed by an expert panel. Rural states dominated the lowest performing categories. This led to a number of responses including: a) questioning the validity and reliability of the evaluation process, especially for rural circumstances, and b) raising concern for the lack of preparedness and determination to improve performance. In fact, the poor performance did not surprise many public health advocates who knew that rural areas entered this time of post-September 11th preparations with relatively fewer resources for preparedness; they were more likely to lack the public health infrastructure needed to address public health emergencies, particularly when compared to urban areas.

* Project Public Health Ready is a collaborative activity between the National Association of County and City Health Officials (NACCHO) and the Centers for Disease Control and Prevention (CDC).

A second study, also released during the current year, again questioned the level of preparedness in Rural America. Elin Gursky, a Senior Fellow for Biodefense and Public Health at the ANSER Institute for Homeland Security, conducted research that focused upon hospitals. Her report, *Hometown Hospitals: The Weakest Link? Bioterrorism Readiness in America's Rural Hospitals,*[3] reinforced the concerns that the Robert Wood Johnson (RWJ) study had identified. Gursky concludes the report with the following words: "With the rising threat of terrorism and the realities of emerging infectious pathogens, protecting civilians has become a key component of achieving national security. Our hospitals will be our frontline of defense in providing the medical response in bioterrorist attacks and large epidemics. This reality is especially significant to rural America, which provides much of the nation's economic vitality and critical infrastructure. However, these communities are vulnerable because of dependence on isolated hospitals with limited capabilities and capacities. Old hospitals are faced with new threats for which they are not prepared. It is time to focus on the role of the rural hospital and to furnish it, its workforce, and its community with the resources necessary to address 21st century biological threats."

Attending the St. Paul conference were leaders from the Centers for Disease Control and Prevention (CDC) as well as key national non-governmental health organizations, including the National Rural Health Association (NRHA), the American Public Health Association (APHA), the National Association of County and City Health Officials (NACCHO) and the Association of State and Territorial Health Officers (ASTHO).

The conference agenda included presentations and panel discussions, as well as educational workshops. Most importantly, however, it divided the participants into three task groups that identified critical issues for rural public health advocates, as well as a number of recommendations. While the 81 participants reflected diverse constituencies and backgrounds, they share the following concerns and commitments:

1. Rural America is vulnerable to bioterrorism and other serious public health emergency threats such as storms and other natural disasters, and must be adequately prepared to protect its citizens;

2. Public health and health care systems in rural America need to be strengthened to meet the challenges of these threats;

3. Policy makers at the federal, state and local levels need to make sure that rural America has the financial and human resources required to achieve an adequate state of readiness; and,

4. Public health and health care leaders in rural areas need to work together to assure that emergency preparedness is achieved in a cost-effective manner.

This is an effort that will not diminish in importance. Responding positively to the above four concerns will require many years of commitment from public health and health care leaders. The Conference Planning Committee has evolved into an expanded Steering Committee that will work with partner organizations to accomplish the following goals:

1. Strengthen advocacy efforts through the National Rural Health Association, as well as the other major national organizations (APHA, ASTHO, NACCHO) represented at the conference.

2. Develop rural preparedness educational initiatives through the CDC – funded Academic Centers for Public Health Preparedness as well as other organizations represented at the conference.

3. Convene periodic "Think Tanks" on rural public health and rural public health preparedness to further refine salient issues and recommendations. The Steering Committee will also work on the development of educational sessions for appropriate conferences, in particular those sponsored by partner organizations.

4. Work with the staffs of Senator Johnson and Congressman Peterson, as well as other legislative leaders, to hold Congressional briefings on rural public health issues. Steering Committee members will also work with the same staff to advocate for a U.S. General Accounting Office (GAO) study on the same topic.

5. Seek to implement all the recommendations contained in this document, including those to strengthen rural public health research projects and rural research institutions.

Rural Preparedness Challenges: Framing the Issues

Prepared by: Hugh H. Tilson MD, DrPH†

Abstract

Rural public health faces all of the issues of the broader public health system today, as summarized in the Institute of Medicine (IOM) report on the *Future of the Public's Health in the 21st Century*.[4] Building systems and partnerships, developing quality assurance and performance standards, as well as engaging and sustaining a professional workforce — and, by extension, possible system accreditation and certification — all critical issues that confront the rural public health system and public health providers. For each of the ten essential services, ten unique rural issues are raised, and there are specific realities that direct how these non-urban settings will shape their own public health structure to meet the needs of a diverse, dispersed and independent citizenry. In order to adequately identify and meet the unique needs of rural America, a research agenda must be established so that policy can be evidence-based.

Introduction

The landmark IOM report on the "*Future of the Public's Health*" (1998) declared that "No community, no matter how small or remote, should be without identifiable and realistic access to the benefits of public health protection, which is possible only through a local component of the official health delivery system." That document defined public health as … "the organized efforts of society, both government and others, to assure conditions in which people can be healthy."

Recognition of and strong agreement about these important efforts has lead to the development of the "Ten Essential Services" for public health by the Public Health Functions Steering Committee (See Table 1). Underlying these essential services is the goal to "assure, assess and develop policy that defines and describes what every citizen ought to be able to identify in a local community."

Building capacity to monitor health status, diagnose and investigate diseases, mobilize community partnerships, link people to needed services, ensure a competent workforce and evaluate the effectiveness, accessibility and quality of population-based services requires economic support, technical infrastructure and policy and regulatory guidance and leadership.

The 2002 edition of the IOM report calls for a renewed exploration and strengthening of the partnerships with the local medical community, voluntary services community, media, businesses and industry, and academic institutions necessary to have an active and robust public health system.

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† Senior Advisor to the Dean, University of North Carolina School of Public Health and Senior Fellow at the Maine Center for Public Health.

Meeting the Public Health Preparedness Needs of Rural America

The issues faced by public health everywhere confront rural public health, but by virtue of the sparse population as well as resource and infrastructure limitations, pose unique challenges. The large distances between communities, the struggle to provide health care services, shortages of a skilled professional health care workforce, the lack of technical infrastructure, and differing priorities are among the compelling issues that face rural communities as they attempt to develop public health services and public health preparedness initiatives.

While the 2002 edition of the IOM report was being drafted, the attack of September 11, 2001, and the anthrax attacks that followed, had a profound influence on its content. No longer were the essential services relevant solely for the purpose of good public health practice, but now, in addition, every community required protection from the man-made epidemics and injuries of threatened bioterrorism. Public health protections now must include public health preparedness, in every community—no matter how small or remote!

The new report re-enforced the recommendations to ensure the presence of a governmental entity at the local level (community, county, or regional) throughout the country, but also drew attention to the uniqueness and importance of public health and public health preparedness in rural America.

These imperatives apply no less in rural areas, but because of the uniqueness of the rural circumstance, often require additional and/or different approaches. To begin to appreciate those differences, Table 2 describes the 10 essential services and their unique rural context.

Table 1: Ten Essential Public Health Services

- Monitor health status to identify community health problems
- Diagnose and investigate health problems and health hazards in the community
- Inform, educate, and empower people about health issues
- Mobilize community partnerships to identify and solve health problems
- Develop policies and plans that support individual and community health efforts
- Enforce laws and regulations that protect health and ensure safety
- Link people to needed personal health services and assure the provision of health care when otherwise unavailable
- Assure a competent public health and personal health care workforce
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services
- Research for new insights and innovative solutions to health problems

Source: *Public Health in America,* Public Health Functions Steering Committee, Public Health Service. 1994

Table 2: Ten Essential Services and Their Relationship to Rural Health

Essential Service	Rural Issue
Monitor health status	Connectivity and technology
Diagnose and investigate health problems	Small numbers, need for a trained eye
Inform, educate and empower people	Unique rural perspective/culture
Mobilize community partnerships	Different partners, some not there at all
Develop policies and plans	Multiple jurisdictions; weak local governments
Enforce laws and regulations	Distributed enforcement
Link people to needed personal health services	Often no services are available
Assure a competent public health and personal health care workforce	To what standard?
Evaluate effectiveness, accessibility and quality of personal and population based services	Tougher to recruit competent workforce
Research for new insights and innovative solutions to health problems	Lack of academic focus/interest

All local public health must monitor health status (essential service one). Rural America, however, is challenged as a result of a lack of automation, computer support, and the necessary connectivity to make a health alert network and web-based communications a reality. Further, small numbers in any single jurisdiction make trend analysis much more challenging.

All local public health needs the capacity to diagnose and investigate health problems (essential service two). Rural America is challenged far more as a consequence of the lack of trained experts in government agencies, in the small rural hospital and in the ambulatory environment. The infectious disease specialists, like other medical specialists, congregate around the major medical centers. Few centers are located in rural areas, and those that exist often lack the connectivity to deliver the essential service in partnership with the broader health community.

All local public health providers should inform, educate, and empower people to protect their own health and act constructively on their own behalf (essential service three). Materials developed for the urban environment may not be relevant and culturally appropriate to conditions in rural America.

The imperative for local public health systems to mobilize community partnerships (essential service four; the heart of the systems approach envisioned by the new IOM report) are hard won in rural America because there is no ‘slack’ in the system.

Individuals and organizations that comprise the public health system have little spare time to participate in these partnerships, which are often complicated by relying on volunteerism as their core support.

The challenge of developing public health policies and plans (essential service five) often requires collaboration across many disparate governments, jurisdictions and regions not tied to any obvious governmental purpose. Furthermore, all local public health rests on the enforcement of laws and regulations (essential service six) which may be volunteer-based or non-existent in the rural setting.

While all local public health must link people to needed personal health services (essential service seven), transportation to care is challenged by distance and/or weather-related isolation. Issues related to adequate supply or health care providers and high rates of uninsurance further complicate the adequate provision of personal health services.

Assuring a competent workforce (essential service eight) is always a core public health function in America, but doing so in rural areas often requires competence beyond that which can be attracted by the area. This is further complicated by difficulties in accessing training (which is often not valued by those employing the public health workforce).

While public health must evaluate effectiveness, accessibility, and quality of personal and population based services (essential service nine), the tools to do so are difficult to apply and not always welcomed even in the most sophisticated of urban settings, much less in rural areas.

Advancing research for new insights and innovative solutions to health problems (essential service ten) is difficult in rural areas given the fact that few major public health research enterprises in America have sought to address geographic barriers. Such advances are typically achieved through partnerships between academia and the community (i.e., community-based research), but few academic research institutions have focused efforts on conducting this research in rural settings.

Thus, while the obligations of public health are the same across the nation, they are unique and uniquely challenging in rural America.

Funding and organization directed at improving our nation's preparedness have been vital to connect the first responder, emergency management, and homeland security establishments with their newly discovered public health partners. And preparedness training has been indispensable in helping public health to rise to the challenge of being an effective partner.

The successes achieved in building the nation's preparedness have been breath-taking and deserve our highest praise and thanks. But organizational and educational efforts emanating at the national level, often envision a homogeneous system that is not realistic, as demonstrated in Table 3.

Table 3: Rural Preparedness Challenges: What are the Unique Issues for Rural Health?

The Preparedness Myth	The Rural Reality
All terrorism is created equal	Bioterrorism in particular, need not be 'an event'; biological agents necessitate public health expertise in all phases and places
It's all about population concentration	Biological agents are dispersible; and one cow down can paralyze and entire food group; evacuation from urban areas
The built environment is the target	The water, the air, the transportation corridors, and of course, agribusiness are all potential targets
Evidence-based policy	There is very much we just don't know about public health, rural health, and rural preparedness

The myth that all terrorism is created equal leads to misguided and misdirected resources. The reality is that bioterrorism will differ from other forms of attack or mass casualty events. Often the signs and symptoms of a foreign substance, biological and chemical, are subtle, and do not differ from those of underlying "expected" illnesses, except in their severity and/or numbers. And, such agents can be dispersed, mechanically or by human movement and dissemination.

For example, the issue of agro-terrorism demonstrates both the essential nature and the fragility of our food chain. Rivers and roads flow from state to state and hazmat corridors are long and remote and difficult to secure. One cow down can paralyze an entire beef industry.

In summary, the issues of the delivery of public health services in rural communities with geographic dispersal, communication barriers, and small population clusters pose unique problems, different from those in the urban areas, which are the foci of response routines and plans.

Linking Solutions for Rural Public Health Preparedness

Under-supported for so long, with an inadequate and thinly spread infrastructure, rural public health faces significant resource issues. This concern is particularly acute in rural America where the first and best thing to do may be to build the foundation (i.e., capacity to fulfill public health functions). However, categorical and programmatic restrictions that often accompany funding require the addition of a preparedness function on a system incapable of supporting, much less managing and advancing it. The lack of grantsmanship and the lack of sustainability of such money from Washington (or Atlanta) have meant that rural America has been slow to receive federal funding. In addition, the absence of non-supplantation provisions with teeth has let in many cases to the diversion of what little money was already flowing to rural public health into other priorities. Avoiding this pitfall has proven to be difficult in a tax-weary local environment. The rescission and re-direction of funding to urban preparedness initiatives has further compounded the challenges facing rural public health.

Finally, it is important to recognize one central issue facing public health practice nationally and especially in rural areas is the lack of a substantial body of research. Without the evidence base describing what works for public health delivery and protection, advocacy has to rest upon the theory and promise of public health. We must move forward to build a research infrastructure in academia which focuses on public health practice, with all of the necessary changes in the rewards and recognition system in academia, with organizational, faculty, student and fellow, and research project funding to attract the brightest and best, and with the research agenda focused on addressing the nation's most critical public health delivery problems around preparedness. This topic will be addressed in a subsequent section of this document.

Thanks to the efforts of the Council on Linkages, which has made the development of this research one of its highest priorities in recent years, and Academy Health, which has obliged by creating a much needed forum for scholars in the field, there is now a clear way forward. For the attendees at this conference, a research agenda which recognizes the general preparedness delivery challenges must be complemented with a set of high priority still unanswered questions to inform policy decisions about preparedness in rural America

These are among the issues facing those of us who are concerned about public health preparedness for rural America. They are urgent. And they will require concerted thoughtful effort. But then, that is why we have called together the brightest and best to this conclave to begin the course of building toward a safer, better prepared health future for ALL of our citizens, in every community no matter how small or remote. After all, rural America deserves no less!

All of these unique rural public health delivery system issues are central to understanding the core challenges of rural preparedness because an inadequate infrastructure will fail to support any superstructure.

The director of the Centers for Disease Control and Prevention (the CDC) at that time, Dr. Jeffrey Koplan observed "either we are all protected or we are all at risk."

This is the urgent focus of this conference.

Multi-State Survey of State Preparedness Directors

Prepared by: Paul Kuehnert, MS, RN‡

Abstract

Public health emergency capacity in both rural and urban settings still lags in most states. Rural states face common challenges in building public health emergency preparedness capacity. It is imperative to define, describe and understand the unique preparedness differences that exist in the rural communities of this country so that financial and human resources need to be targeted to these rural areas to strengthen our overall national level of readiness.

Introduction

Rural America has been called on in several instances to respond to local and regional emergencies such as natural disasters (hurricanes, ice storms) and man-made events such as the arsenic poisoning in northern Maine. The ways in which communities have responded to these incidents gives some clues to the importance of local relationships and coordination of efforts. However, as noted in the preceding article, there is very little data regarding the response networks that exist in rural communities, and the organization of local government functions with respect to public health threats, including bioterrorism.

The Trust For America's Health (TFAH) report, *Ready or Not? Protecting the Public's Health in the Age of Bioterrorism*,[2] examined 10 key indicators to assess areas of improvement and areas of ongoing vulnerability in our nation's effort to prepare against bioterrorism and other large-scale health emergencies. After two years and nearly $2 billion of federal bioterrorism preparedness funding, states are only modestly better prepared to respond to health emergencies than they were prior to September 11, 2001.

Nearly 75 percent of states earned positive marks for only half (five) or fewer of the 10 possible indicators. California, Florida, Maryland and Tennessee scored the highest, earning seven of the 10 possible indicators. Arkansas, Kentucky, Mississippi, New Mexico and Wisconsin scored the lowest, meeting just two of the indicators.

The report found that progress has been made in most states to expand the health emergency communications network, upgrade public health laboratories and develop initial bioterrorism response plans.

Major concerns addressed by the report include: cuts to public health programs in nearly two-thirds of states; an impending shortage of trained professionals in the public health workforce; disagreements between state and local public health agencies over resource allocation; and tie-ups of much of the federal bioterrorism funding due to bureaucratic

‡ Executive Director, Office of Public Health Emergency Perparedness, Bureau of Health, Maine Department of Health and Human Services.

obstacles. The report also found that only Florida and Illinois are prepared to distribute and administer emergency vaccinations or antidotes from the national stockpile. It also showed that states' readiness for other health emergencies, such as major infectious disease outbreaks like severe acute respiratory syndrome (SARS) or a pandemic flu, is seriously inadequate.

The ability to identify the differences between public health emergency preparedness efforts, particularly those pertaining to urban and rural settings, and to understand those differences is critical to ensuring an adequate system.

To better understand these dynamic relationships and the needs of different jurisdictions, the Office of Public Health Emergency Preparedness, Bureau of Health, Maine Department of Human Services and Harvard University School of Public Health conducted a survey of 26 states that were ranked as the highest or lowest performing entities in the TAHF's 2003 assessment.

Methods

Twenty-six state preparedness directors participated in 30-minute telephone interviews. The overarching issues that the survey was designed to address were: the current perceptions of the state capacity to respond to public health emergencies; and the perception of differences (if any) between rural and non-rural states regarding that capacity. Rural states (n=18) were defined as those with more than 25% of its population living outside a standard metropolitan service area (SMSA) as defined by the U.S. Census Bureau.

Participants were asked 17 questions that explored three major benchmarks: current capacity; barriers; and enabling factors. The questions were grouped into five subject areas: public policy (4 questions); health care system (2 questions); public health system (4 questions); public health workforce (4 questions); and connectivity (3 questions) (See Table 4: Sample Questions). Comments and explanations were encouraged throughout the interviews.

Table 4: Sample Questions

Subject Area	Question
Public Policy	Do you have current state (vs. solely federal) financial support for public health emergency preparedness (PHEP)?
Health Care System	Do you have well-equipped and staffed hospital emergency rooms statewide?
Public Health System	Do you have electronic communications linking state and local public health departments 24/7 statewide?
Public Health Workforce	Does your state have strong training support in public health emergency preparedness from an academic [preparedness] center?
Connectivity	Does your state have effective connectivity with other (non-PH) state bodies involved in emergency preparedness?

The focus of this survey, while not completely conclusive, was largely qualitative in nature and was an appropriate first step given the state of knowledge in this area. It is hoped that the results will lead to additional research efforts.

Results

Ninety-six percent of state directors responded to the invitation to participate in this survey; 18 were rural and 8 were urban. Eighteen percent of the rural states (3/17) achieved TFAH scores of 6 or greater, and of these 6% (1/17) received Cities Readiness Initiative (CRI) funding. In contrast, 63% (5/8) of urban states achieved a TFAH score of 6 or higher, and 75% (6/8) of these received CRI funding.

Barriers to Preparedness Efforts

From the 17 questions in the survey, state directors from rural and urban states cited the following factors as the most important barriers to public health preparedness:

- lack of state general fund support;
- status of regional/statewide health care system(s); and
- inadequately staff/equipped hospital emergency rooms.

State preparedness directors from largely urban states highlighted the following as the most important barriers:

- lack of local elected official support; and
- lack of support among legislators.

In contrast, the preparedness directors from largely rural states highlighted the following as the most important barriers:

- lack of strong local health departments; and
- lack of 24/7 electronic communications systems linking state and local health officials.

Overall, these results highlighted the relative importance of political support to the success of preparedness efforts.

Factors Enabling Public Health Preparedness

Survey results revealed that urban and rural state directors shared similar priorities in identifying their most important enabling factors. State directors from both rural and urban states named the following factors as most important enabling factors:

- training support from academic preparedness centers; and
- electronic communications systems 24/7 linking state and local health departments

Not surprisingly, however, there were differences in perceptions of enabling factors. For example, preparedness directors from largely urban states highlighted strong local health departments statewide, planning/evaluation frameworks using logic models, graduate public health programs in-state and well-staffed and equipped hospital emergency rooms as important factors that enhance their ability to respond to public health emergencies.

In contrast, preparedness directors from largely rural states identified effective connectivity with other state agencies, support from the Governor and recent experience with a public health emergency as their most important enabling factors:

Conclusion

Based on the responses from the survey participants, the authors reached several conclusions regarding the similarities and differences between urban and rural states, and importantly, regarding the challenges that remain in ensuring adequate response to national, regional or local public health threats.

Among the strengths and assets that are more likely to be found in urban settings and therefore favor the development of a comprehensive emergency preparedness response include strong local and state legislative support, adequate health care systems, adequate public health infrastructure, and an adequately trained public health workforce. These characteristics are found less often in the rural areas. Interestingly, rural states are more likely to have strong working relationships among public health and non-public health state agency staff.

The clear implications of these findings are that financial and human resources must be targeted to rural states to overcome the barriers to their preparedness, and that further research is needed to better define and describe the needs of rural states, and to examine successful strategies that can be applied in the future.

Setting the Agenda for Change

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Introduction

The disparity between an optimal system response to public health emergencies and what is possible today, and the significant disparities between urban and rural locations are both concerns and opportunities. As long as we remain free of further bioterrorist activities in this country, we have an opportunity to improve the numerous components of the system that have been identified by Trust for America's Health and others. Yet, the realm of man-made events is not the only circumstance that can bring our public health structure to its knees. One need look no further than the SARS experience in Toronto to appreciate the devastation an outbreak, which does not discriminate between urban and rural settings, can cause. As a nation, we must work to close these gaps in our preparedness structure, particularly in the rural areas of the country that lag still far behind in terms of financial, human and organizational capital to appropriately confront public health emergencies.

To advance the effort to identify the needs of rural public health emergency systems, an initial strategy was identified by the conference participants. This strategy consisted of three elements: building capacity; research; and advocacy. These strategic elements will be described below.

Building Capacity

As has been cited in previous papers, the major deficit that characterizes rural public health preparedness is the constraint on human and financial resources needed to build a robust, effective and reliable emergency preparedness infrastructure. One of the principal requisites in building such an infrastructure is a common and comprehensive definition and understanding of what rural public health is and how it is practiced. It is difficult for decision makers to allocate resources if they do not understand the needs and services provided by rural public health practitioners.

It is, therefore, crucial that the rural public health system expand its workforce, develop leadership and build a critical mass of voices that will help to inform them. It is important to recognize that public health providers do great things, and they should be encouraged to become an active community partner.

The absence of leadership and the ability to form viable partnerships across the rural landscape is a significant barrier.

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Workforce Development

Leadership depends on having an empowered and enlightened workforce, and workforce development has long been recognized as a critical issue that constrains the rural emergency public health response. In addition, we must identify and engage individual stakeholders in the discussion of the broader public health emergency preparedness imperative and process, and the particular needs of rural America.

Education is a key element in the effort to improve rural emergency preparedness. There is a need to integrate rural public health preparedness knowledge into all health professions and their curricula including medicine, nursing, public health and other allied professions. Educational development efforts should also target K-12 and community colleges to build interest in public health professions. Workforce development activities and vision should not be limited to only health professionals. Efforts should also be directed at other professions such as business and management to attract a broad spectrum of professional workers to rural communities and increase the likelihood of sustaining an adequate public health workforce. Rural public health leaders should also attempt to identify and document model workforce development programs and best practices as have been deployed in Texas, Alabama and Oklahoma.

Educational Outreach to Optimize Decision-Making Process

Educational initiatives should also be directed toward government agencies. It is often difficult for these officials to make wise decisions about public health preparedness resource allocation if they are unaware or uninformed about the public health sector and preparedness issues. An important element in this process is to provide information to policy-makers on best practices that demonstrate the importance and value of strategies for applying and/or utilizing rural resources.

Research

To support the goal of building the capacity of rural communities to have an adequate emergency response, all participants in this conference agreed that more substantive data is needed. The research areas requiring additional, focused attention include:

- Lack of state and local public health response capacities in some rural areas;
- Lack of uniformity in state and local public health systems for planning consistency;
- Identification of the expanded rural public health system for public health response;
- Identification of necessary competencies in rural public health response;
- Perceived low threat of rural public health emergencies; and
- Need for model practices in rural public health response.

Three core areas for future work were identified. They include:

- the development of infrastructure to support research;
- strategies to address identified research priorities; and
- advocacy recommendations to move the research agenda forward.

Development of Infrastructure to Support Research

Participants recognized that two key ingredients to build interest among researchers for any topic area are the availability of funding and the opportunity to enhance their reputations (i.e., prestige). There are current funding opportunities that exist to support rural public health research. Traditionally, rural health researchers have limited their focus to issues of access to care and public health researchers have tended to neglect rural populations. However, there is no reason that rural researchers cannot use current rural health funding to address broader public health issues and, in turn, there is no reason that public health researchers cannot define "rural" as a population of interest in their current research efforts.

Even with this recognition, however, the group felt strongly that there was a significant need for dedicated funding in the area of *rural public health*. Only this dedication of funding will assure research activities in this area, and the ability to address research priorities noted above. At the Federal level, the group recommends a dedicated focus within the Centers for Disease Control and Prevention on rural public health issues. As the nation's leading public health agency, CDC should be providing the needed leadership to address rural health disparities and building rural public health capacities, but has never had a strong focus in this area. In addition to CDC, other federal agencies focusing on issues of terrorism and emergency preparedness, such as the Federal Emergency Management Agency, the Department of Homeland Security, the Department of Justice, and others should provide dedicated funding to support research designed to enhance rural preparedness. The group also singled out the Agency for Healthcare Quality and Research (AHRQ) for their impressive efforts to conduct rapid research aimed at improving the nation's public health preparedness. Dedicated funding from AHRQ in rural public health preparedness is also recommended.

Finally, the group recognized that Federal agencies are responsible for only a portion of available funding. Foundations and other potential funding entities should also be considered. To advance this recommendation for enhanced funding, the workgroup recommends advocacy from the Federal Office of Rural Health Policy on behalf of rural public health from within the Federal government, as well as a strong legislative focus among the nation's public health and rural health associations and organizations.

In addition to creating infrastructure for rural public health research by enhancing funding opportunities, the workgroup recognized the need to develop "prestige" for researchers focusing their efforts in this area. Specific recommendations included the development of journals in the area of "rural public health" and encouraging existing

rural health and public health journals to include more content in rural public health preparedness. Similarly, the group recommended the creation of a national "rural public health conference" as a presentation venue for researchers, as well as encouraging rural health and public health organizations to include more content in this area within their existing conferences. By enhancing funding opportunities and providing venues to publish and present research findings, the group believes the overall prestige of rural public health as a research focus will be enhanced and more researchers will become active in addressing these issues.

Research Strategies

Specific research strategies to address the previously identified research priorities were a main topic of discussion within the research workgroup. Recommended research strategies included:

- Conducting demonstration projects, including cross-jurisdictional (county and state) projects;
- Highlighting case studies and best practices;
- Developing adaptable templates for program implementation;
- Focusing on community-participatory research strategies;
- Increasing linkages among researchers, and between researchers and community partners, including elected officials;
- "Mining" current data sets and summarizing current information;
- Conducting research that can be easily translated into policy;
- Enhancing communications among researchers with an interest in rural public health – creating a network of rural public health researchers; and
- Creating measurable objectives for rural public health research with easily identifiable goals.

Research Advocacy Recommendations

To accomplish these goals, the workgroup recommended a strong focus on advocating for rural public health research as a unique and strongly needed priority area. While there is a need to advocate for the allocation of funds for rural public health research, there was a recognition that a necessary first step would be to educate legislators, the rural caucus, agency heads, and the researchers themselves on issues of rural health. Essentially, we need to answer the following question for these individuals: *What is different about rural public health, and why is it appropriate to have a dedicated focus in this area?* This education needs to happen at two levels – non-rural individuals (especially those at CDC) need to be educated on what makes rural different and rural individuals need to be educated on issues of rural public health.

Finally, the group recognized that in order to have an effective advocacy effort, all of us who advocate for a rural public health focus need a strong, consistent, yet succinct message. We believe that the message "if we are at risk, you are at risk" may be an effective message to accomplish this goal.

Advocacy

Rural health has often focused on access to care issues, often to the exclusion of broader population (i.e., public health) efforts. Public health has focused on many of these otherwise neglected broader population efforts, but has often failed to distinguish between rural and non-rural populations. In examining rural public health in general, and rural public health preparedness specifically, several key themes emerge:

The Advocacy Working Group developed some key assumptions which framed the discussion. The assumptions were:

- All states are different. Some have centralized systems while others are decentralized. Some have no local public health departments at all.

- Advocacy efforts must focus on rural public health in general. Preparedness is a subset of that focus. We can capitalize on the preparedness topic issue and make it broader. For example, outbreaks in rural areas may be more important even though the numbers are smaller. The impact to the community may be greater.

The important issue is not rural vs. urban public health. Each has critical needs. It is not that rural public health needs more advocacy. Rather, it needs different advocacy strategies. Rural people are a very large disparate group of people. Significant health care disparities exist in rural areas. Limited access to health care is a commonality among all rural people. Environmental health is important; our water supply and energy sources, including nuclear power plants, are based in rural areas. Militia activities are also more prevalent in rural areas. Public health workforce challenges, such as recruitment and retention are even more difficult in rural areas.

Advocacy efforts must start with an increasing understanding about what public health is at the most basic level. Public health is a system, not just specific services. It would be difficult to get the attention of national leaders without grassroots movements at the state level which demonstrate popular support for public health. Hospitals operate with a community board. Health departments are located in community government. City councils and township boards do not understand the financial needs for rural public health, and political support needs to be built at the local level. Business models can help frame a public health message to commissioners and economic groups to explain how funds are used to sustain the local public health services. Business and economic research groups can be consulted to help us frame our public health message as a business message. Lines of accountability and responsibility are a core organizational issue in rural public health advocacy.

Key elements in mounting an effective advocacy campaign are developing and articulating unifying themes about rural public health, NOT just preparedness. Furthermore, preparedness must be defined broadly to include infectious disease, food borne outbreaks and natural disasters. Coalitions should be built at multiple levels, beginning at the local level and growing to include state, regional and national partnerships with organizations such as the American Public Health Association (APHA), the National Rural Health Association, The Association of State and Territorial Health Officers (ASTHO) and The National Association of County and City Health Officials (NACCHO). Finally, to engage and empower these partnerships and coalitions, advocacy tools must be developed that sustain and support the mission and themes of the effort.

Conclusion

Four unifying themes were articulated by participants at the conference. They were:

1. *Rural communities differ significantly* across geographic regions and even within regions. Key areas of community diversity include: economic factors; the non-urban workplace, including agriculture, and the non-urban workforce, including migrant workers; bioterrorism targets including the defense establishment and transportation corridors; demographic make-up and population density; terrain, distance from urban areas and medical hubs; and community resources and level of official public health presence.

2. *The work of public health requires a trained, qualified workforce*. Most schools of public health, as well as most training opportunities, are available only in urban areas. A common complaint from rural public health practitioners is that centralized training often fails to address issues unique to rural areas. While recruitment and retention of public health workers is challenging everywhere, it is even more difficult in rural areas.

3. *Disease surveillance systems must be sensitive* enough to address small number issues and broad enough to track emerging infections.

4. *Rural communities are isolated from high-intensity communications media*, including high-speed internet for rapid public health alerts to all relevant public health and health care partners.

As a consequence of these findings, public health emergency capacity continues to lag in most states, whether urban or rural. The 2004 TFAH survey found that despite incremental progress, there is still a significant gap in the ability to protect citizens from a bioterrorist attack, three years after September 11, 2001.[2] Public health emergency capacity still lags in most states, whether urban or rural. Importantly, more than two-thirds of states and the District of Columbia achieved a score of six or less. Florida and North Carolina scored the highest (9/10 indicators), while Alaska and Massachusetts scored the lowest (3/10). In this year's report, 34 states and Washington, D.C. obtained higher scores than last year, nine states achieved scores remained the same, and the scores for seven states declined. While these scores demonstrate continued incremental progress, according to the TFAH report, preparedness is still lagging.

Among the major concerns cited in the 2004 report by the Trust for America's Health were the following:

- Nearly one-third of states cut their public health budgets between Fiscal Year 2003 and 2004, and federal bioterrorism funding decreased by more than $1 million per state in 2004;

- Shifting federal priorities and programs distract from improvement efforts, and there is little, if any, accountability to the public;
- Only six states — Florida, Illinois, Louisiana, and three undisclosed states — have achieved "green" status for the Strategic National Stockpile (SNS), which means that they are recognized as being adequately prepared to distribute vaccines and antidotes in an emergency;
- Only five public health labs report sufficient capabilities (facilities, technology, and/or equipment) to fully respond to a chemical terrorism threat, and only one-third of states report sufficient bioterrorism lab response capabilities;
- Nearly 60 percent of states do not have adequate numbers of laboratory scientists to test for anthrax or the plague if there were to be a suspected outbreak;
- Two-thirds of states do not electronically track disease outbreak information by national standards, causing serious delays in reporting and making early warning of disease threats difficult;
- The public health workforce is on the brink of a "brain drain" as the baby boomers retire and next-generation recruitment efforts suffer;
- Concerns remain that states are unprepared to implement a quarantine, although every state except Alaska has adequate statutory authority to quarantine in response to a hypothetical bioterrorism attack scenario;
- Although planning for a flu pandemic, which is often viewed as requiring a similar response to a bioterror attack, has improved, 20 states still do not have publicly available response plans in place; and
- Based on model estimates, a pandemic flu hitting the U.S. could result in 89,000 to 207,000 deaths and could cost the economy between $71.3 and $166.5 billion. Sixteen states could face over 5,000 deaths and 33 states would face over 10,000 people hospitalized in the first wave of the disease hitting the U.S.

The participants at this meeting agreed that:

1. Rural America is vulnerable to bioterrorism and other serious public health emergency threats such as storms and other natural disasters, and must be adequately prepared to protect rural as well as all citizens;

2. Public health and health care systems in rural America need to be strengthened to meet the challenges of these threats;

3. Policy makers at the federal, state and local levels need to make sure that rural America has the financial and human resources required to achieve an adequate state of readiness; and

4. Public health and health care leaders in rural areas need to work together to assure that emergency preparedness is achieved in a cost-effective manner.

Conference participants also generally agreed that their goal, strengthening rural public health capacity, is going to be an on-going struggle. To address that challenge, the Conference Planning Committee has evolved into an expanded Steering Committee that will work with partner organizations to accomplish the following goals:

1. Strengthen advocacy efforts through the National Rural Health Association, as well as the other major national organizations (APHA, ASTHO, NACCHO) represented at the conference.

2. Develop rural preparedness educational initiatives through the CDC – funded Academic Centers for Public Health Preparedness as well as other organizations represented at the conference;

3. Convene periodic "Think Tanks" on rural public health and rural public health preparedness to further refine salient issues and recommendations. The Steering Committee will also work on the development of educational sessions for appropriate conferences, in particular those sponsored by partner organizations.

4. Work with the staffs of Senator Johnson and Congressman Peterson, as well as other legislative leaders, to hold Congressional briefings on rural public health issues. Steering Committee members will also work with the same staff to advocate for a U.S. General Accounting Office (GAO) study on the same topic.

5. Seek to implement all the recommendations contained in this document, including those to strengthen rural public health research projects and rural research institutions.

All of these concerns reflect even greater challenges for the rural areas of our country whose resources are limited, workforce depleted, and populations dispersed.

This report is an effort to draw attention to this tremendous need, and to remind policy makers of the importance of former CDC director, Dr. Jeffrey Koplan's statement: "Either we are all protected or we are all at risk." The whole is greater than the sum of its parts. We must work diligently to ensure an adequate emergency response across our rural communities.

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